

(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **05232540 A**

(43) Date of publication of application: **10.09.93**

(51) Int. Cl.

**G02F 2/02**

**H01S 3/10**

(21) Application number: **04036181**

(22) Date of filing: **24.02.92**

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(54) **OPTICAL CIRCUIT**

(57) Abstract:

PURPOSE: To obtain the optical circuit which provide high distance resolution loss over a wide measurement distance range and generates a frequency- modulated light wave for light frequency band reflection measurement.

CONSTITUTION: A frequency shifter 12, an optical switch 13, and an optical amplifier 14 are connected in order to the output port OUT<sub>2</sub> of an optical directional coupler 11, and the optical amplifier 14 is connected to an input port IN<sub>2</sub> to form an optical loop circuit. An optical modulator 15 which modulates continuous light from a light source 16 into repetitive pulse light is connected to an input port IN<sub>1</sub>, and an external control system 17 synchronously controls the pulse signal outputted from the optical modulator 15 and the ON/OFF state of the optical switch 13 to obtain an external output from an output port OUT<sub>1</sub>.

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